- 2. For all Class B(CW2) waters, the early life stage will begin on April 1 and last through September 30.
- 3. For all Class B(WW-1) waters, the early life stage will begin in March and last through September, except as follows:
 - For the following, the early life stage will begin in February and last through September:
 - —The entire length of the Mississippi and Missouri Rivers,
 - —The lower reach of the Des Moines River south of the Ottumwa dam, and
 - —The lower reach of the Iowa River below the Cedar River.
 - For the following, the early life stage will begin in April and last through September:
 - —All Class B(WW-1) waters in the Southern Iowa River Basin,
- —All of the Class B(WW-1) reach of the Skunk River, the North Skunk River and the South Skunk River south of Indian Creek (Jasper County), and the Class B(WW-1) tributaries to these reaches, and the entire Class B(WW-1) reach of the English River.
- 4. For all Class B(WW-2) and Class B(WW-3) waters, the early life stage will begin in April and last through September.
- 5. For all Class B(LW) lake and wetland waters, the early life stage will begin in March and last through September except for the Class B(LW) waters in the southern two tiers of Iowa counties which will have the early life stage of April through September.
- c. Class "C" waters. Waters which are designated as Class "C" are to be protected as a raw water source of potable water supply. The following criteria shall apply to all Class "C" waters designated in subrule 61.3(5).
 - (1) Radioactive substances.
- 1. The combined radium-226 and radium-228 shall not exceed 5 picocuries per liter at the point of withdrawal.
- 2. Gross alpha particle activity (including radium-226 but excluding radon and uranium) shall not exceed 15 picocuries per liter at the point of withdrawal.
- 3. The average annual concentration at the point of withdrawal of beta particle and photon radioactivity from man-made radionuclides other than tritium and strontium-90 shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year.
- 4. The average annual concentration of tritium shall not exceed 20,000 picocuries per liter at the point of withdrawal; the average annual concentration of strontium-90 shall not exceed 8 picocuries per liter at the point of withdrawal.
- (2) All substances toxic or detrimental to humans or detrimental to treatment process shall be limited to nontoxic or nondetrimental concentrations in the surface water.
 - (3) The pH shall not be less than 6.5 nor greater than 9.0.
- d. Class "HH" waters. Waters which are designated as Class HH shall contain no substances in concentrations which will make fish or shellfish inedible due to undesirable tastes or cause a hazard to humans after consumption.
- (1) The human health criteria represent the level of protection necessary, in the case of noncarcinogens, to prevent adverse health effects in humans and, in the case of carcinogens, to prevent a level of incremental cancer risk not exceeding 1 in 100,000. Instream concentrations in excess of the human health criteria will be allowed only within the boundaries of the mixing zone.
 - (2) Reserved.

TABLE 1. Criteria for Chemical Constituents

(all values as micrograms per liter unless noted otherwise)

Human health criteria for carcinogenic parameters noted below were based on the prevention of an incremental cancer risk of 1 in 100,000. For parameters not having a noted human health criterion, the U.S. Environmental Protection Agency has not developed final national human health guideline values. For noncarcinogenic parameters, the recommended EPA criterion was selected. For Class C waters, the EPA criteria for fish and water consumption were selected using the same considerations for carcinogenic and noncarcinogenic parameters as noted above. For Class C waters for which no EPA human health criteria were available, the EPA MCL value was selected.

				1	Use Desigi	nations			
Parameter		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)	С	НН
Alachlor	MCL	_	_	_	_	_	_	2	_
Aluminum	Chronic	87	_	388	773	773	748	_	_
	Acute	1106	_	4539	9035	9035	983	_	_
Antimony	Human Health + — F & W	_	_	_	_	_	_	_	14 ^(f)
Arsenic (III)	Chronic	200	_	200	1000	1000	200	_	_
	Acute	360	_	360	1800	1800	360	_	_
	Human Health — Fish	_	_	_	_	_	_	_	50 ^(e)
	Human Health — F & W	_	_	_	_	_	_	_	.18 ^(f)
Asbestos	Human Health — F & W	_	_	_	_	_	_	_	7(a)(f)
Atrazine	MCL	_	_	_	_	_	_	3	_
Barium	Human Health + — F & W	_	_	_	_	_	_	_	1000 ^(f)
Benzene	Human Health — F & W	_	_	_	_	_	_	_	12 ^(f)
	Human Health — Fish	_	_	_	_	_	_	_	712.8 ^(e)
Benzo(a)Pyrene	Human Health — F & W	_	_	_	_	_	_	_	.044 ^(f)
Beryllium	MCL	_	_	_	_	_	_	4	_
Bromoform	Human Health — F & W	_	_	_	_	_	_	_	43 ^(f)
	Human Health — Fish	_	_	_	_	_	_	_	3600 ^(e)
Cadmium	Chronic	1	_	15	25	25	1	_	_
	Acute	4	_	75	100	100	4	_	_
	Human Health + Fish	_	_	_	_	_	_	_	168 ^(e)
	MCL	_	_	_	_	_	_	5	_
Carbofuran	MCL	_	_	_	_	_	_	40	_

				1	Use Design	nations			
Parameter		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)	С	НН
Carbon Tetrachloride	Human Health — F & W	_	_	_	_	_	_	_	2.5 ^(f)
	Human Health — Fish	_	_	_	_	_	_	_	44.2 ^(e)
Chlordane	Chronic	.004	_	.004	.15	.15	.004	_	_
	Acute	2.5	_	2.5	2.5	2.5	2.5	_	_
	Human Health — Fish	_	_	_	_	_	_	_	$.006^{(e)}$
	Human Health — F & W	_	_	_	_	_	_	_	.021 ^(f)
Chloride	MCL	_	_	_	_	_	_	250*	_
Chlorobenzene	Human Health + — Fish	_	_	_	_	_	_	_	21*(e)
	MCL	_	_	_	_	_	_	100	_
Chlorodibromomethane	Human Health — F & W	_	_	_	_	_	_	_	4.1 ^(f)
	Human Health — Fish	_	_	_	_	_	_	_	340 ^(e)
Chloroform	Human Health — F & W	_	_	_	_	_	_	_	57 ^(f)
	Human Health — Fish	_	_	_	_	_	_	_	4700 ^(e)
Chloropyrifos	Chronic	.041	_	.041	.041	.041	.041	_	_
Cinoropyinos	Acute	.083	_	.083	.083	.083	.083	_	_
Chromium (VI)	Chronic	40	_	40	200	200	10	_	
Cinolinum (VI)	Acute	60	_	60	300	300	15		
	Human Health + — Fish				500	500	13		3365 ^(e)
	MCL							100	_
	WICL							100	
Copper	Chronic	20	_	35	55	55	10	_	_
	Acute	30	_	60	90	90	20	_	_
	Human Health + Fish	_	_	_	_	_	_	_	1000(e)
	Human Health + — F & W	_	_	_	_	_	_	_	1300 ^(f)
Cyanide	Chronic	5	_	10	10	10	10	_	_
	Acute	20	_	45	45	45	45	_	_
	Human Health + — F & W	_	_	_	_	_	_	_	700 ^(f)
Dalapon	MCL	_	_	_	_	_	_	200	_
Dibromochloropropane	MCL	_	_	_	_	_	_	.2	_
4,4-DDT ++	Chronic	.001	_	.001	.029	.029	.001	_	_
	Acute	.9	_	.8	.95	.95	.55	_	_
	Human Health — Fish	_	_	_	_	_	_	_	.0059(e)
	Human Health — F & W	_	_	_	_	_	_	_	.0059(f)

Dinoseb

Diquat

2,4-D

2,3,7,8-TCDD (Dioxin)

MCL

MCL

Human Health — F & W Human Health — Fish

Human Health + --- F & W

7

20

1.3-7(f)

.00014†(e)

100^(f)

Use Designations B(CW1) B(CW2) B(WW-1) B(WW-2) B(WW-3) B(LW) НН Parameter o-Dichlorobenzene MCL 600 para-Dichlorobenzene Human Health + --- F & W 400^(f) Human Health + --- Fish 2.6*(e) 3,3-Dichlorobenzidine Human Health - Fish .2^(e) $.4^{(f)}$ Human Health - F & W Dichlorobromomethane Human Health - F & W $5.6^{(f)}$ Human Health — Fish 460^(e) 1,2-Dichloroethane Human Health - F & W 3.8(f) Human Health — Fish 986(e) .57(f) 1,1-Dichloroethylene Human Health - F & W Human Health - Fish 32(e) cis-1,2-Dichloroethylene MCL 70 trans-1,2-Dichlorethylene Human Health + --- F & W $700^{(f)}$ Dichloromethane MCL 5 $5.2^{(f)}$ 1,2-Dichloropropane Human Health - F & W Di(2-ethylhexyl)adipate 400 18^(f) Di(2-ethylhexyl)phthalate Human Health - F & W Dieldrin Chronic .056 .056 .056 .056 .056 Acute .24 .24 .24 .24 .24 Human Health — Fish .0014(e) Human Health — F & W $.0014^{(f)}$

				τ	Jse Desigi	nations			
Parameter		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)	С	НН
Endosulfan(b)	Chronic	.056	_	.15	.15	.15	.15	_	_
	Acute	.11	_	.3	.3	.3	.3	_	_
	Human Health + Fish	_	_	_	_	_	_	_	240 ^(e)
	Human Health + — F & W	_	_	_	_	_	_	_	110 ^(f)
Endothall	MCL	_	_	_	_	_	_	100	_
Endrin	Chronic	.05	_	.036	.036	.036	.036	_	_
	Acute	.12	_	.086	.086	.086	.086	_	_
	Human Health + Fish	_	_	_	_	_	_	_	.81 ^(e)
	Human Health + — F & W	_	_	_	_	_	_	_	.76 ^(f)
Ethylbenzene	Human Health + — F & W	_	_	_	_	_	_	_	3100 ^(f)
Ethylene dibromide	MCL	_	_	_	_	_	_	.05	_
Fluoride	MCL	_	_	_	_	_	_	4000	_
Glyphosate	MCL	_	_	_	_	_	_	700	_
Heptachlor	Chronic	.0038	_	.0038	.01	.01	.0038	_	_
	Acute	.38	_	.38	.38	.38	.38	_	_
	Human Health — Fish	_	_	_	_	_	_	_	.002 ^(e)
	Human Health — F & W	_	_	_	_	_	_	_	.0021 ^(f)
Heptachlor epoxide	Human Health — F & W	_	_	_	_	_	_	_	.001 ^(f)
Hexachlorobenzene	Human Health — F & W	_	_	_	_	_	_	_	.0075 ^(f)
y-Hexachlorocyclohexane		N/A	_	N/A	N/A	N/A	N/A	_	_
(Lindane)	Acute	.95	_	.95	.95	.95	.95	_	_
	Human Health — Fish	_	_	_	_	_	_	_	.63 ^(e)
	Human Health — F & W	_	_	_	_	_	_	_	.19 ^(f)
Hexachlorocyclo- pentadiene	Human Health — F & W	_	_	_	_	_	_	_	240 ^(f)
Lead	Chronic	3	_	30	80	80	3	_	_
	Acute	80	_	200	750	750	80	_	_
	MCL	_	_	_	_	_	_	50	_
Mercury (II)	Chronic	3.5	_	2.1	3.7	3.7	.91	_	_
	Acute	6.5	_	4.0	6.9	6.9	1.7	_	_
	Human Health + — Fish	_	_	_	_	_	_	_	.15(e)
	Human Health + F & W	_	_	_	_	_	_	_	.05 ^(f)

Parameter B(CW1) B(CW2) B(WW-1) B(WW-2) B(WW-3) B(LW) C HH Methoxychlor Human health + - F & W - - - - - - 100(f) Nickel Chronic 350 - 650 750 750 150 - - Acute 3250 - 5800 7000 7000 1400 - - Human Health + - Fish - - - - - - 4584(e) Human Health + - F & W - - - - - - 610(f) Nitrate as N MCL MCL MCL MCL MCL MCL MCL MC					1	Use Design	nations			
Nickel Chronic 350 — 650 750 750 150 — — Acute 3250 — 5800 7000 7000 1400 — — Human Health + — Fish — — — — — — — 4584(e) Human Health + — F & W — — — — — — 610 ^(f)	Parameter		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)	С	НН
Acute 3250 — 5800 7000 7000 1400 — — Human Health + — F & W — — — — — — — 4584(e) Human Health + — F & W — — — — — 610(f)	Methoxychlor	$Human\ health + F\ \&\ W$	_	_	_	_	_	_	_	100 ^(f)
Human Health + — Fish — — — — — 4584(e) Human Health + — F & W — — — — — — 610 ^(f)	Nickel	Chronic	350	_	650	750	750	150	_	_
Human Health + — F & W — — — — — — — 610 ^(f)		Acute	3250	_	5800	7000	7000	1400	_	_
		Human Health + Fish	_	_	_	_	_	_	_	4584(e)
Nitrate as N MCL 10* -		Human Health + — F & W	_	_	_	_	_	_	_	610 ^(f)
	Nitrate as N	MCL	_	_	_	_	_	_	10*	_
Nitrate + Nitrite as N MCL 10* -	Nitrate + Nitrite as N	MCL	_	_	_	_	_	_	10*	_
Nitrite as N MCL 1* -	Nitrite as N	MCL	_	_	_	_	_	_	1*	_
Oxamyl (Vydate) MCL — — — — — 200 —	Oxamyl (Vydate)	MCL	_	_	_	_	_	_	200	_
Parathion Chronic .013 — .013 .013 .013 .013 — —	Parathion	Chronic	013	_	013	013	013	013	_	_
Acute .065 — .065 .065 .065 — —	1 araunon									
1646 1666 1666 1666		110000	.002		.002	.002	.002	.002		
Pentachlorophenol (PCP) Chronic (d) — (d) (d) (d) — —	Pentachlorophenol (PCP)	Chronic	(d)	_	(d)	(d)	(d)	(d)	_	_
Acute (d) — (d) (d) (d) — —	r entaemorophenor (r er)		` '	_	` '	` '	` '	. ,	_	_
Human Health — Fish — — — — — — — 82 ^(e)				_					_	82(e)
Human Health — F & W — — — — — — — — — .28 ^(f)										
		Tullian Ticalui — T & W								.20
Picloram MCL — — — — — 500 —	Picloram	MCL	_	_	_	_	_	_	500	_
Polychlorinated Chronic .014 — .014 1 1 .014 — —	Polychlorinated	Chronic	.014	_	.014	1	1	.014	_	_
Biphenyls (PCBs) Acute 2 — 2 2 2 — —	-		2	_	2	2	2		_	_
Human Health — Fish — — — — — — .0004(e)	y ()		_	_	_	_	_	_	_	.0004(e)
Human Health — F & W — — — — — — — .0017 ^(f)			_	_	_	_	_	_	_	
1000										10017
Polynuclear Aromatic Chronic .03 — .03 3 3 .03 — —	Polynuclear Aromatic	Chronic	.03	_	.03	3	3	.03	_	_
Hydrocarbons (PAHs)** Acute 30 — 30 30 30 — —	•			_					_	_
Human Health — Fish — — — — — — — .3(e)	, ()		_	_					_	.3(e)
Human Health — F & W — — — — — — — — .044 ^(f)			_	_	_	_	_	_	_	
Tulian Team 1 C 11		Tuman Treatm T & W								.011
Phenols Chronic 50 — 50 50 50 — —	Phenols	Chronic	50	_	50	50	50	50	_	_
Acute 1000 — 2500 2500 2500 1000 — —				_					_	_
Human Health + — Fish — — — — — — — — 300(e)										
Human Health + — F & W — — — — — — — — — 21*(f)				_						
		manual fromth — i & w								21
Selenium (VI) Chronic 10 — 125 125 125 70 — —	Selenium (VI)	Chronic	10	_	125	125	125	70	_	_
Acute 15 — 175 175 100 — —				_					_	_
Human Health + — F & W — — — — — — — — — 170 ^(f)				_	_	_	_	_	_	170 ^(f)

				1	Use Design	nations			
Parameter		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)	С	НН
Silver	Chronic	N/A	_	N/A	N/A	N/A	N/A	_	_
	Acute	30	_	100	100	100	4	_	_
	MCL	_	_	_	_	_	_	50	_
2,4,5-TP (Silvex)	MCL	_	_	_	_	_	_	10	_
Simazine	MCL	_	_	_	_	_	_	4	_
Styrene	MCL	_	_	_	_	_	_	100	_
Tetracholorethylene	Human Health — F & W	_	_	_	_	_	_	_	8 ^(f)
Thallium	Human Health + — F & W	_	_	_	_	_	_	_	1.7 ^(f)
Toluene	Chronic	50	_	50	150	150	50	_	_
Totalic	Acute	2500	_	2500	7500	7500	2500	_	_
	Human Health + — Fish	_	_	_	_	_	_	_	300*(e)
	Human Health + — F & W		_	_	_	_	_	_	6800 ^(f)
	Truman Treatur 1 — T & W								0000
Total Residual	Chronic	10	_	20	25	25	10	_	_
Chlorine (TRC)	Acute	35	_	35	40	40	20		
Chiorine (TRC)	Acute	33	_	33	40	40	20		_
Towarhous	Chuonio	.037		.037	027	.037	.037		
Toxaphene	Chronic		_		.037			_	_
	Acute	.73	_	.73	.73	.73	.73	_	
	Human Health — Fish	_	_	_	_	_	_	_	.0075 ^(e)
	Human Health — F & W	_	_	_	_	_	_	_	.0073 ^(f)
1,2,4-Trichlorobenzene	MCL	_	_	_	_	_	_	70	_
1,1,1-Trichlorethane	MCL	_	_	_	_	_	_	200	_
1,1,1-Themoremane	Human Health + — Fish							_	173*(e)
	Human Heatin + — Fish	_	_	_	_	_	_	_	1/3:(3)
1,1,2-Trichloroethane	Human Health — F & W	_	_	_	_	_	_	_	6 ^(f)
Trichloroethylene (TCE)	Chronic	80	_	80	80	80	80	_	_
memorocary tene (102)	Acute	4000	_	4000	4000	4000	4000	_	_
	Human Health — Fish	_	_	_	_	_	_	_	807 ^(e)
	Human Health — F & W	_	_	_	_	_	_	_	27 ^(f)
	Traman Treatm — T & W								21
Trihalomethanes (total)(c) MCL	_	_	_	_	_	_	80	_
Vinyl Chloride	Human Health — F & W	_	_	_	_	_	_	_	20 ^(f)
. mj. omoriuo	Human Health — Fish		_	_	_	_	_		5250 ^(e)
	11aman 11canii — 11sii					_			3230
Xylenes (Total)	MCL	_	_	_	_	_	_	10*	_

					Use Design	nations			
Parameter		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)	С	НН
Zinc	Chronic	200	_	450	2000	2000	100	_	_
	Acute	220	_	500	2200	2200	110	_	_
	Human Health + Fish	_	_	_	_	_	_	_	5000(e)
	Human Health + F & W	_	_	_	_	_	_	_	9100 ^(f)

- * units expressed as milligrams/liter
- ** to include the sum of known and suspected carcinogenic PAHs
- † expressed as nanograms/liter
- + represents the noncarcinogenic human health parameters
- ++ The concentrations of 4,4-DDT or its metabolites; 4,4-DDE and 4,4-DDD, individually shall not exceed the human health criteria.
- (a) units expressed as million fibers/liter (longer than 10 micrometers)
- (b) includes alpha-endosulfan, beta-endosulfan, and endosulfan sulfate in combination or as individually measured
- (c) The sum of the four trihalomethanes (bromoform [tribromomethane], chlorodibromomethane, chloroform [trichloromethane], and dichlorobromomethane) may not exceed the MCL.
- (d) Class B numerical criteria are for pentachlorophenol a function of pH using the equation: Criterion (μ g/I) = $e^{[1.005(pH) x]}$, where e = 2.71828 and x varies according to the following table:

	B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)
Acute	3.869	_	4.869	4.869	4.869	4.869
Chronic	4.134	_	5.134	5.134	5.134	5.134

- (e) This Class HH criterion would be applicable to any Class B(LW), B(CW1), B(WW-1), B(WW-2), or B(WW-3) water body that is also designated Class HH.
- (f) This Class HH criterion would be applicable to any Class C water body that is also designated Class HH.

TABLE 2. Criteria for Dissolved Oxygen

(all values expressed in milligrams per liter)

	B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)	
Minimum value for at least 16 hours of every 24-hour period	7.0	7.0	5.0	5.0	5.0	5.0*	
Minimum value at any time during every 24-hour period	5.0	5.0	5.0	4.0	4.0	5.0*	

^{*}applies only to the upper layer of stratification in lakes

TABLE 3a. Acute Criterion for Ammonia in Iowa Streams

	Acute Criterion, mg/ (or Criterion Maximum Conce	
pН	Class B(WW-1), B(WW-2), B(WW-3) & B(LW)	Class B(CW1) & B(CW2)
6.5	48.8	32.6
6.6	46.8	31.3
6.7	44.6	29.8
6.8	42.0	28.0
6.9	39.1	26.1
7.0	36.1	24.1
7.1	32.8	21.9
7.2	29.5	19.7
7.3	26.2	17.5
7.4	23.0	15.3
7.5	19.9	13.3
7.6	17.0	11.4
7.7	14.4	9.64
7.8	12.1	8.11
7.9	10.1	6.77
8.0	8.40	5.62
8.1	6.95	4.64
8.2	5.72	3.83
8.3	4.71	3.15
8.4	3.88	2.59
8.5	3.20	2.14
8.6	2.65	1.77
8.7	2.20	1.47
8.8	1.84	1.23
8.9	1.56	1.04
9.0	1.32	0.885

TABLE 3b. Chronic Criterion for Ammonia in Iowa Streams - Early Life Stages Present

	Chronic Criterion - Early Life Stages Present, mg/l as N (or Criterion Continuous Concentration, CCC)										
			(01 01111		Temperatu		, ,				
pН	0	14	16	18	20	22	24	26	28	30	
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46	
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42	
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37	
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32	
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25	
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18	
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09	
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99	
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87	
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74	
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61	
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47	
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32	
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17	
7.9	2.8	2.8	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03	
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897	
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773	
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661	
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562	
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475	
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401	
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339	
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287	
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244	
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208	
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179	

TABLE 3c. Chronic Criterion for Ammonia in Iowa Streams - Early Life Stages Absent

		Ch		erion - Earl				N		
			(or Crite	rion Contii	nuous Con	centration	, CCC)			
pН					Temperatu					
•	0-7	8	9	10	11	12	13	14	15*	16*
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.7	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.8	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7.0	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8.0	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.99
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.9	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9.0	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442

^{*}At 15°C and above, the criterion for fish early life stage (ELS) absent is the same as the criterion for fish ELS present.

- 61.3(4) Class "C" waters. Rescinded IAB 4/18/90, effective 5/23/90.
- **61.3(5)** *Surface water classification.* The department hereby incorporates by reference "Surface Water Classification," effective March 22, 2006. This document may be obtained on the department's Web site at http://www.iowadnr.com/water/standards/index.html.
- **61.3(6)** Cold water use designation assessment protocol. The department hereby incorporates by reference "Cold Water Use Designation Assessment Protocol," effective December 15, 2004. This document may be obtained on the department's Web site at http://www.state.ia.us/epd/wtresrce/wquality/index.htm.
- **61.3(7)** Warm water stream use assessment and attainability analysis protocol. The department hereby incorporates by reference "Warm Water Stream Use Assessment and Attainability Analysis Protocol," effective March 22, 2006. This document may be obtained on the departments Web site at http://www.iowadnr.com/water/standards/index.html.

This rule is intended to implement Iowa Code chapter 455B, division I, and division III, part 1.

567—61.4 to **61.9** Reserved.

VOLUNTEER MONITORING DATA REQUIREMENTS

567—61.10(455B) Purpose. The department uses water quality monitoring data for a number of purposes, including determining compliance with effluent limits for operation permits issued under 567—Chapter 64. The department also uses water quality monitoring data to determine the relative health of a water body by comparing monitoring data to the appropriate water quality standards established in 567—Chapter 61, a process known as water body assessments. Water body assessments are performed to prepare the biennial water quality report required under Section 305(b) of the Act and the list of impaired waters under Section 303(d) of the Act.

Iowa Code sections 455B.193 to 455B.195 require that credible data, as defined in Iowa Code section 455B.171, be used for the purpose of preparing Section 303(d) lists and other water quality program functions. Data provided by a volunteer are not considered credible data unless provided by a qualified volunteer. The purpose of this chapter is to establish minimum requirements for data produced by volunteers to meet the credible data and qualified volunteer requirements.

- **567—61.11(455B) Monitoring plan required.** Volunteer water quality monitoring data submitted to the department must have been produced in accordance with a department-approved volunteer water quality monitoring plan before the data may be used for any of the purposes listed in Iowa Code section 455B.194. Approval of a plan will establish qualified volunteer status for the personnel identified in the plan for those monitoring activities covered under the plan.
- **61.11(1)** Submittal of the plan. Prior to initiation of volunteer water quality monitoring activities intended to produce credible data, a water quality monitoring plan must be submitted to the department for review and approval. The plan must be submitted to the Volunteer Monitoring Coordinator, Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319, a minimum of 90 days before planned initiation of volunteer monitoring activities. A letter transmitting the plan must specifically request formal review and approval of the plan and identify a contact person. Volunteer monitors are encouraged to communicate with the department and to attend volunteer monitoring training sessions prior to formal submittal of a plan.
- **61.11(2)** Content of the plan. A volunteer monitoring plan must contain, at a minimum, the following to be considered an acceptable volunteer monitoring plan:
 - a. A statement of the intent of the monitoring effort.

- b. The name(s) of the person or persons that will be involved in data collection or analysis, the specific responsibilities of each person or group of people, and the general qualifications of the volunteers to carry out those responsibilities. For groups, such as educational institutions, it will be acceptable to identify the persons involved by general description (e.g., tenth grade biology class) with the exception of persons in responsible charge.
- c. The name(s) of the person or persons that will oversee the monitoring plan, ensure that quality assurance and control objectives are being met, and certify the data. The person or persons in responsible charge must have training commensurate with the level of expertise to ensure that credible data is being generated.
- d. The duration of the volunteer monitoring effort. In general, the department will not approve plans of greater than three years' duration unless a longer duration is justified.
 - e. Location and frequency of sample collection.
 - f. Methods of data collection and analysis.
 - g. Record keeping and data reporting procedures.
- **61.11(3)** Department review of the plan. The department will review monitoring plans and normally approve or disapprove the plan within 90 days of receipt. The department will work with the contact person identified in the plan to make any necessary changes prior to taking formal action. The department will use guidelines contained in the publications EPA Requirements for Quality Assurance Project Plans (EPA QA/R-5, 2001) and Volunteer Monitor's Guide to Quality Assurance Project Plans (1966, EPA 841-B-96-003) or equivalent updates to determine if the plans provide adequate quality assurance and quality control measures. Approval or disapproval of the plan will be in the form of a letter and approval may include conditions or limitations.
- **61.11(4)** Changes in monitoring plans. The department must approve any changes to an approved monitoring plan. Data collected under a modified plan will not be considered credible data until such time as the department has approved the modifications. Modifications to an approved plan should be submitted at the earliest possible time to avoid interruptions in data collection and to ensure continuity of data.
- **61.11(5)** Appeal of disapproval. If a monitoring plan submitted for approval is disapproved, the decision may be appealed by filing an appeal with the director within 30 days of disapproval. The form of the notice of appeal and appeal procedures are governed by 567—Chapter 7.
- **567—61.12(455B)** Use of volunteer monitoring data. Data produced under an approved water quality monitoring plan will be considered credible data for the purposes listed in Iowa Code section 455B.194 if the following conditions are met.
- **61.12(1)** Data submittal. A qualified volunteer monitor or qualified volunteer monitoring group must specifically request that data produced under an approved volunteer monitoring plan be considered credible data. A letter identifying the specific data must be submitted along with a certification from the volunteer or the person in responsible charge for volunteer groups that the data, to the best of the volunteer's or responsible person's knowledge, was produced in accordance with the approved volunteer monitoring plan. The department shall provide a standard format on the IOWATER Web site for submittal of qualified volunteer data and related information. The department encourages volunteers to enter monitoring data on the IOWATER volunteer monitoring database maintained by the department, but doing so does not constitute submittal to or acceptance of the data by the department for uses requiring credible data. Volunteer data shall be labeled as such in any departmental reports, Web sites, or databases.
- **61.12(2)** Department review of submitted data. The department must review and approve the submitted data. The person submitting the data will be informed of the department's decision either to accept or reject the data. The department will attempt to resolve any apparent inconsistencies or questionable values in the submitted data prior to making a final decision.

567—61.13(455B) Department audits of volunteer monitoring activities. The department shall conduct field audits of a statistically valid and representative sample of volunteer data collection and analysis procedures to ensure compliance with an approved plan and may conduct confirmatory monitoring tests. Volunteers shall be informed of any audit results and be provided with an opportunity to address any concerns to the extent possible. The department reserves the right to rescind approval of an approved plan if it finds substantial problems that cannot be addressed in a timely manner to ensure the quality of the data being produced.

```
These rules are intended to implement Iowa Code chapter 455B, division III, part 1.
     [Filed March 15, 1966; amended March 20, 1967, October 14, 1969, June 8, 1971,
                     June 26, 1972, July 12, 1972, February 13, 1974]
            [Filed 6/28/76, Notice 5/3/76—published 7/12/76, effective 8/16/76]
            [Filed 7/1/77, Notice 2/23/77—published7/27/77, effective 8/31/77]
           [Filed without Notice 7/28/77—published 8/24/77, effective 9/28/77]
            [Filed 7/27/78, Notice 5/3/78—published 8/23/78, effective 9/27/78]
            [Filed 2/2/79, Notice 11/1/78—published 2/21/79, effective 3/28/79]
         [Filed 10/26/79, Notice 6/27/79—published 11/14/79, effective 12/19/79]
          [Filed 8/29/80, Notice 6/25/80—published 9/17/80, effective 10/22/80]
              [3/25/83, Notice 1/5/83—published 4/13/83, effective 5/18/83]
              [Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]
          [Filed 12/2/83, Notice 6/22/83—published 12/21/83, effective 1/25/84]
          [Filed 10/19/84, Notice 7/18/84—published 11/7/84, effective 12/12/84]
            [Filed 7/12/85, Notice 3/13/85—published 7/31/85, effective 9/4/85]
            [Filed 8/7/86, Notice 4/9/86—published 8/27/86, effective 10/1/86]
             [Filed emergency 11/14/86—published 12/3/86, effective 12/3/86]
            [Filed 3/30/90, Notice 8/9/89—published 4/18/90, effective 5/23/90]
          [Filed 8/31/90, Notice 6/13/90—published 9/19/90, effective 10/24/90]
         [Filed 10/26/90, Notice 7/11/90—published 11/14/90, effective 12/19/90]
          [Filed 11/26/90, Notice 9/19/90—published 12/12/90, effective 1/16/91]
            [Filed 7/19/91, Notice 2/20/91—published 8/7/91, effective 9/11/91]
           [Filed 1/31/92, Notice 7/10/91—published 2/19/92, effective 3/25/92]
          [Filed 2/28/92, Notice 11/13/91—published 3/18/92, effective 4/22/92]
            [Filed 5/22/92, Notice 4/1/92—published 6/10/92, effective 7/15/92]
           [Filed 7/31/92, Notice 5/13/92—published 8/19/92, effective 9/23/92]
          [Filed 10/23/92, Notice 9/2/92—published 11/11/92, effective 12/16/92]
            [Filed 5/21/93, Notice 2/17/93—published 6/9/93, effective 7/14/93]
            [Filed 7/2/93, Notice 2/17/93—published 7/21/93, effective 8/25/93]
         [Filed 10/22/93, Notice 8/18/93—published 11/10/93, effective 12/15/93]
           [Filed 7/29/94, Notice 5/11/94—published 8/17/94, effective 9/21/94]
            [Filed 5/19/95, Notice 2/15/95—published 6/7/95, effective 8/9/95]
           [Filed 8/25/95, Notice 6/7/95—published 9/13/95, effective 10/18/95]
          [Filed 2/23/96, Notice 12/20/95—published 3/13/96, effective 4/17/96]
           [Filed 5/31/96, Notice 3/13/96—published 6/19/96, effective 7/24/96]
           [Filed 1/24/97, Notice 10/9/96—published 2/12/97, effective 3/19/97]
          [Filed 5/26/00, Notice 11/17/99—published 6/14/00, effective 7/19/00]
          [Filed 9/29/00, Notice 5/17/00—published 10/18/00, effective 11/24/00]
           [Filed 8/31/01, Notice 2/7/01—published 9/19/01, effective 10/24/01]
           [Filed 5/24/02, Notice 1/9/02—published 6/12/02, effective 7/17/02]
            [Filed 6/18/02, Notice 2/6/02—published 7/10/02, effective 8/14/02]
```

[Filed 5/22/03, Notice 1/8/03—published 6/11/03, effective 7/16/03] [Filed 3/18/04, Notice 9/17/03—published 4/14/04, effective 5/19/04] [Filed 4/23/04, Notice 9/17/03—published 5/12/04, effective 6/16/04] [Filed 10/22/04, Notice 4/14/04—published 11/10/04, effective 12/15/04] [Filed 1/27/06, Notice 9/14/05—published 2/15/06, effective 3/22/06]◊